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A CHAT ABOUT AMBASSADORS.

DIPLOMACY as carried on by the British government may be said to consist of three great departments. There is first the diplomacy intrusted to ambassadors; second, the diplomacy carried on by envoys extraordinary; and third, the diplomacy under the control of the *chargé d'affaires*, who can transact business with a foreign minister only. The British government has embassies in Paris, Constantinople, Vienna, St Petersburg, and Berlin; of envoys or plenipotentiaries extraordinary it has twenty-three; and three of *chargé d'affaires*. The constitution of the first of these departments implicitly includes the second and third.

The duties of an ambassador are not trivial, for he is abroad not only as the representative of his sovereign, but also as the agent of his government at home. In strict truth, the ambassador has to play the double part of master and servant: on the one hand, the splendour of the Crown whence his authority has emanated must be preserved; and on the other, he has to report everything that shall help his countrymen to legislate for the best interests of their empire abroad.

The practice of sending embassies proper dates from the fifteenth century. It is true that the Romans had their embassies and spies long before the above date; but the embassies of the ancients must not be confounded with those of more modern times. A Roman embassy was but a makeshift, either for the purpose of concluding a hasty treaty or for demanding hostages. Therefore, it will be quite evident to any one, with even the slightest knowledge of what a British embassy is, that Roman and British embassies differ entirely from each other. All British embassies sent out between the fifteenth and eighteenth centuries made their exit in a most imposing style; and even until the year 1840, special warships were provided for their removal.

Every ambassador going abroad requires letters or credentials from his sovereign; and these letters must be presented to the king or ruler at whose

court the envoy is to reside. The contents of the letters are purely formal, and generally end with the assurance that whatever the ambassador does in the sovereign's name, the sovereign shall stand by it.

The relative position of ambassadors has been the subject of many disputes; the spirit of rivalry has always been very keen—so keen, that it has even spread to the courts represented. When an ambassador arrives from his country, it is the duty of the court at which he is to reside to see to his comfort in the way of providing coaches and other minor matters. The ambassador has many privileges, and one of these is the liberty of standing covered in the presence of royalty. In the past, it was customary for the ambassador of the first power to stand on the sovereign's right hand. Sir Henry Vane, the representative of the English Queen, was placed in this position by the Doge at the Council of Ten in the city of Venice. The knotty problem regarding position is now settled according to the date of the ambassador's arrival. The custom of making formal speeches to the court and by the court is also done away with, although in the courts of Vienna and Berlin there is still a survival of the ancient mode of procedure. As regards formality and show, no court in the world can rival that of Japan; there everything is done in the grandest style.

It is in the power of a sovereign to refuse an audience to an ambassador who may not be a favourite; but such instances are rare, because it is generally well known before the ambassador sets out whether he will be pleasing or otherwise. While at court, the ambassador ranks next to princes of the blood; and according to Her Majesty's rule in St James's, plenipotentiaries follow dukes, but in all cases precede marquises. On the continent of Europe, audiences can be obtained by ambassadors from the sovereign without the attendance of any government official or minister; this is not the custom in Britain, because at every audience there must at least be one member of the cabinet to represent the

government in power. George IV. liked these private audiences, and this explains the great influence wielded over the king by such men as Prince Lieven and Estaraliz. Canning was continually complaining of the deeds of these meddlesome envoys, and generally summed up his complaints with the quaint remark, 'His father [George III.] would not have done that.'

The person of an ambassador is considered inviolable. This law prevailed in the ancient world; because it was for a breach of the 'international agreement' that Alexander the Great laid the city of Tyre in ruins. And nothing was better fitted to rouse the ire of Roman patriots than an insult done against the person of their *legatus* or ambassador. In modern times, there have been instances of this 'inviolable' law being disregarded; thus, Dr Donislaus was murdered at the Hague in 1649; and in our day we have seen the natives of Cabul storming the British Residency in that city and slaying Cavagnari (the Queen's deputy) and most of his associates. Such occurrences mark the time as a period when passion and blind fury are the guides of reason. Further, to intercept an ambassador going through the territory of a third party is a great and culpable offence. The Sultan had no scruples in treating the envoys of his enemies with the greatest severity; for whenever war broke out, the ambassadors were placed in a prison called the Seven Towers, and kept there until all hostilities ceased. The Turkish government continued this practice up to the year 1827.

During the reign of George III., the British ambassador in the person of Lord Whitworth was insulted by Bonaparte, at that time First Consul of France. Lord Granville, from his place in the House of Lords, had declared that France by her warlike preparations was artfully at war with Britain, and demanded an explanation of Bonaparte's conduct. Whitworth at the time was the British envoy. When the representative of Britain was announced, Napoleon, who had been frolicking with his nephew, entered the audience chamber, and thus accosted Whitworth: 'And so you are determined to go to war.'

'No,' replied his lordship; 'we are too sensible of the advantages of peace.'

'We have already,' continued the First Consul, 'been at war for fifteen years, and it seems you wish to fight for fifteen years more; and you are forcing me to it.'—Then turning to the other ambassadors who were standing near, Bonaparte exclaimed: 'The English wish for war; but if they are the first to draw the sword, I shall be the last to sheathe it. They do not respect my treaties. In future, they must be covered with black crape.' Then resuming his conversation with Lord Whitworth, in an angry and insulting tone, he said: 'If you wish to fight, I will fight also. You may kill France, but never intimidate her.' In his excitement, Bonaparte threw himself into a threatening attitude, and even raised his cane, while Lord Whitworth laid his hand upon his sword.

This insult to Britain in the person of its envoy produced a profound sensation throughout Europe, and it was also one of the 'provocative' causes that led up to Waterloo.

But the British themselves have not always respected the rights of ambassadors, for during the regime of Cromwell the brother (Don Pantaleon Sa) of the Portuguese envoy was put to death. Don Pantaleon was a reckless fellow, and while in the Exchange, London, with about thirty associates, he started an altercation with the bystanders, which terminated in a free fight, in which one man was killed. The offenders took refuge in the house of the Portuguese ambassador, and this latter individual, according to his rights, refused to give them up, and wished that Cromwell might be made aware of the circumstances of the case. When Cromwell heard of the matter, he gave the envoy two alternatives—either to deliver up the offenders, or be delivered himself and all his company into the hands of the mob. The former was preferred. Pantaleon was arraigned, but refused to plead. An instrument of torture, however, soon changed his mind; and a verdict of guilty was returned against Pantaleon and three of his friends. Many plans were tried to persuade Cromwell to grant a reprieve, but he was inexorable, saying: 'Blood has been spilt, and justice must be satisfied.' And the only concession he would grant was that Pantaleon, in consequence of his nobility, might be beheaded, instead of suffering the ignominious death of hanging.

Ambassadors are also exempted from the law of the country in which they are sojourning. The spot on which their houses are built becomes *their* territory, which fact is made known to all by the hoisting of the embassy's flag. This is not all, for no servant or other member of the ambassador's train can be arrested without their chief's consent. And the only redress obtainable by an insulted person is to appeal to the ambassador, and failing his approval, to carry the matter further, and lay it before the court which has sent out the embassy.

In the reign of Queen Anne, an ambassadorial quarrel occurred between England and Peter the Great, whose ambassador had been taken out of his coach in London and arrested for debt. Peter demanded that the sheriff of Middlesex and all others concerned should be punished with instant death; but Queen Anne directed her secretary to inform this autocrat that 'she could inflict no punishment upon the meanest of her subjects unless it was warranted by the law of the land;' and politely added, 'that she was persuaded he would not insist on impossibilities.' To appease, however, the clamour of the other ambassadors, who made common cause in the matter, a bill was passed through parliament to prevent such occurrences for the future, and with this the Czar had to be satisfied.

The embassy is entirely free of all imperial taxes, and can also get goods from abroad free of duty. With regard to local taxes, the ambassador, if he chooses, can refuse to pay such. In the matter of postage, the ambassador is on a footing of equality with all men; still, he can despatch free of charge his own couriers bearing his reports and other missives. These messengers are also looked upon as inviolable. In the days when travelling was done for the most part by means of the stagecoach, ambassadors had a prior claim to all post-horses.

The different forms of religion were at one

time a great source of annoyance to ambassadors ; but nowadays, whatever may be the religion of the people amongst whom the envoy is residing, he has the right to worship in the manner most suitable to the dictates of his own conscience ; hence, in the land of his sojourn he can build and retain his private chapel.

Such are some of the duties and rights of the men carrying on the diplomatic relations of this and other countries. In the course of historical events, we know that Britain has sent to other countries many eminent ambassadors, and has also had as eminent sent to her by other European nations. Two of the latter we desire to mention. The first is Prince Eugene, the devoted ally of Britain during the long war of the Spanish Succession. On January 5, 1712, he landed at Greenwich, and proceeded to London, where he was greeted by the populace with the greatest enthusiasm. Queen Anne received her illustrious visitor with all the marks of respect due to his rank and mission ; but Her Majesty was a very rigid observer of court etiquette, whilst her distinguished guest was more of a warrior than a courtier ; consequently, though he received in public every mark of royal favour, the queen did not fail to let it be known in her own select circle that he was no welcome visitant at her court. Yet her dislike seems to have had no other foundation than the fashion of the Prince's wig. It was etiquette for gentlemen to appear before Her Majesty in full-bottomed wigs ; and the Prince excited the royal lady's chagrin by appearing in a tie wig. The courtiers joined in Her Majesty's capricious disdain. But Eugene showed his contempt for these triflers and their petty formalities by satirically observing that, never having had a periwig of his own, he had ineffectually attempted to borrow one amongst his footmen and valets.

In the reign of George IV. another eminent ambassador, Marshal Soult, came to England. He also appeared at the coronation of the present Queen. At that time he stood on the left side of the throne ; and right opposite him was Arthur Wellesley, Duke of Wellington. The two soldiers had been opposed to each other on many a well-fought field ; and he is a strange man who can picture the two heroes linked with all the heroism of the Peninsular War without feeling touched with the thought that at times humanity can become one in spirit, for universal history, in reviewing the lives of Wellington and Soult, declares 'never was there a nobler victor or a nobler vanquished hero.'

RICHARD CABLE,

THE LIGHTSHIPMAN.

CHAPTER XL.—THE FIRST SHELPH.

MISS OTTERBOURNE lived in a handsome old square Queen Anne mansion near Bath. It was built of Bath stone, with rusticated quoins to the angles, with pillars to the grand entrance. A stiff, stately house, with large park-like grounds and beautiful terraced gardens. The house—Bewdley Manor—was about four miles from the station ; and when Josephine arrived, a private omnibus was in waiting to receive her and her boxes. The coachman

was in half-livery, the boy out of it. They had come to fetch a servant, so they wore as little of the badge of servitude as might be, just as the officers of Her Majesty throw off their uniform the moment they are off parade.

'Be you the young lady as is coming to our place?' asked the boy, addressing Josephine.

'If you will explain to me what your place is,' answered Josephine, 'I may perhaps be able to answer your question.'

'Miss Otterbourne is our old lady,' said the boy. —'You take a hold of that end of the box, and we'll give it a hoist and heave it up on the roof. Looky' here ; stand on the axle, and you'll get it up.'

'I will call the porter to help you,' observed Josephine coldly.

'As you like, young woman ; but mind you—you tip him if he comes and helps.'

Josephine considered a moment ; then, without summoning the porter, stepped on the axle, and assisted in lifting her box upon the roof of the omnibus. If she tipped the porter, it would be with Richard's money. She had come to Bewdley to be a servant ; she must begin to work at once.

When she sat by herself in the conveyance with her small parcels, she began to realise for the first time the complete change in her circumstances. In the train, she had thought of her father, of Hanford, of Aunt Judith, of the Sellwoods, with a tenderness and melting of the heart which ever and anon filled her eyes. She had spent a happy youth at dear Hanford, following her own whims, going out in her boat as she liked, playing on her piano when she liked, amusing herself in the garden or in the house undirected, uncontrolled by any one. Now, she was about to pass into a position where she would not be able to call her time her own, where she might follow her own desires in nothing. At Hanford, she had been surrounded with friends—the kind, good Sellwoods ; Lady Brentwood ; old Sir John ; her affectionate but stupid aunt. Every one knew her there. Now, she was entering the society of total strangers. If she were about to associate with strangers of her own station, it would have been less disquieting ; but she was plunging into a social stratum which was to her as strange as the persons composing it, who were about to become her daily companions.

It was already evening and dusk as she entered the private omnibus at the station ; and she was tired with her journey by train, and with the strain on her mind through which she had passed. Through the square windows of the carriage she saw dimly the meadows, the high hedges, the trees, the cottages, where the lamps were being lighted. She heard the coachman and the boy salute and cast jokes at passing labourers. She saw and heard all, and without taking notice of anything. What she saw and heard mixed with what passed in her head, and formed a conglomeration of

merate of conflicting and new experiences and ideas, that left her bewildered and frightened. Presently, the coachman shouted and drew up; then, through the windows, Josephine saw a lodge, and a girl came out and threw apart the iron gates into a park. In another moment the carriage passed through, and the wheels rolled over the smooth drive to the house. Josephine saw that the grounds were extensive, wide lawns over which white mist was settling, out of which rose grand clumps of beech and elm, and here and there a solitary cedar. Then the omnibus turned out of the main drive, and in another moment was rattling over the pavement of the court behind the house. The carriage stopped. The boy came to the door and opened it.

'Here you are, miss,' he said. 'Step up on the axle and help me down with your box; unless you'd like to get on the roof yourself and pass it down to me.'

'I am afraid I shall not be strong enough to support it. Cannot a groom or some other man help?'

'Oh, I don't know. I reckon if you want anything done here, you must do it yourself. Every one here is so frightfully engaged over his own work, and it is no one's place to help another.' However, the boy condescended to shout, and a footman came to the kitchen door. 'The young lady wants to be helped with her box,' said the boy; whereupon the footman came leisurely across the yard and took a good survey of Josephine, especially of her face.

'Come,' said he graciously, 'as you're so good-looking, I don't mind helping you. A little wanting in style, p'raps.—I am Mr Polkinghorn, and you are Miss—Miss'—

'Cable is my name,' answered Josephine curtly.

'No particular objection to alter it, I s'pose?' said the footman, who laughed at his joke. 'But it takes two to effect that—don't it, miss?' And he laughed again. 'You'll excuse my sportiveness, miss,' said he, taking the box on his shoulder as the boy let it down from the roof of the carriage; 'I'm generally considered a wit.'

When the box was on the ground, he dusted his shoulders and arms, and asked: 'And pray, what sort of people were you with last? Any style about 'em? People of rank and position and fortune?'

'This is my first place,' answered Josephine.

'You don't mean to say so! How on earth did our old woman come to take you, miss?—Oh, I remember—you was recommended by the Sellwoods. I knew them—not exactly intimately, but off and on; they come here to stay with our party. You see, they are relatives; and the cap'n will inherit our little place after the old bird hops.'

'Hops?' repeated Josephine, not understanding him.

'Ay—kicks.'

'Kicks? I don't understand.'

'Hops the twig, kicks the bucket.—How dull you are! I fear your education has been neglected. I observe there is something countrified and gawky about you.—Don't be uneasy; we'll put you to rights soon.—Now, my dear, take this handle, and Charley shall hold the other, and we'll soon have the box into the kitchen.—You'll excuse me lending a hand—a weight on the

muscles of my arm makes them shake, and I have to be very particular that they are not unsteady. I have to carry the glass and plate, and the candles. I wouldn't spill the wax on the carpet not for worlds.—So you know old Sellwood, do you? A worthy old chap. Pity he's a parson; he ought to be Squire. I know his elder brother, and don't think much of him. There's not the true ring about him that I like to find in the British aristocracy. The grand old English gentleman—you know the song. The young man will inherit this property, you know—it's a tidy estate. One can live on it without any of your dirty, sneaking, underhand pinching.—Look here, pretty! Don't encourage no familiarities on the part of Mr Vickary, the butler. He and I differ in politics. He's an out-and-out Radical, and it is asserted he has got a wife stowed away somewhere.—You can always fall back on me, if he makes advances. My name is Mr Polkinghorn. There is a village in the west of England that takes its name from our family.—Cable is your name, is it? Rather clumsy work tying a true-lover's knot in a cable.—You'll excuse my fun, dear; I'm always considered a wag.'

Josephine's face was dark with indignation and with heat, when she reached the kitchen. Mr Polkinghorn had made her carry one side of the box, whilst he walked behind advising steadiness, as she and the stable-boy ascended the steps to the kitchen carrying the box.

At the door, Mr Polkinghorn gave Josephine an aside: 'Mind you give yourself no airs, miss. Airs ain't tolerated in our little place. It's the one thing we can't swallow. Airs are, so to speak, fatal.'

He stepped nimbly over the box into the middle of the kitchen, and addressed a portly woman there, wearing an apron, and a flaming red face: 'Mrs Purvis, allow me to introduce Miss Cable to you—a young lady introduced to us by our mutual friends the Sellwoods. She solicits your kind patronage.—This, Miss Cable, is our artist, Mrs Purvis,' aside, behind his hand, 'Cook.'

Then to a maid-servant: 'Miss Woods, permit me—Miss Cable, Miss Woods.—Where is Miss Raffles?—Oh, attending to duties up-stairs; very well.—Sorry not to be able to introduce you to Miss Raffles. She is drawing the blinds, I presume.—But here is our sprightly Miss Wagstaff, a host in herself.—Miss Wagstaff, Miss Cable; Miss Cable, Miss Wagstaff.' Then, aside, 'Scullery-maid.'

'What is the meaning of this?' asked Mrs Purvis, without noticing Josephine. 'Is my kitchen a back hall, is it a lumber-room?—What have you dared for to bring a box in here for, and—preserve us, a cage with a bird in it? Is this an aviary and a zoological garden?—Take 'em all away at once. Mr Polkinghorn, Charley, what do you mean? Take 'em away instantly into the back hall. I'm not going to have my kitchen made into a rummage, not for any Cables or Tables or what you may call 'em.'

'It's the curry,' whispered Mr Polkinghorn to Josephine. 'When there's anything for dinner requiring cayenne, or chilli, or anything spicy and hot—it gets into her temper. She'll be right enough when she's slept it off.—Come along. I'll

show you the way with the box into the back hall.—Charley! help the lady.—Miss Woods, is it asking too much of you that you should step up to Mrs Grundy and inform her of the arrival of the lady recommended to us by the Sellwoods? Then aside, 'Housekeeper, Grundy is.'

'Hulloa!' exclaimed the butler, stepping in, a man with white head, red blotched face, and yellow, watery eyes—a man with a sour and dogged look. 'Our new arrival.—Humph! Had a long journey. You shall have a glass of cherry brandy with your supper.'

'He approves of you,' whispered Mr Polkinghorn, 'or he would not have offered cherry brandy.—Beware! He don't offer mistress's cherry brandy to every one. Miss Raffles has never wetted her lips to it, I believe. Mr Vickary doesn't like her. Her nose is badly shaped.'

Josephine was taken to the housekeeper's room. Mrs Grundy gave orders for her box to be taken up-stairs and who was to do it. Without orders, no one did anything; and with orders, did extra work grumbling.

Josephine was shown her room by the second housemaid, Jane. She was not to have a room to herself; she must share that of Jane—that is, of Miss Raffles. The room was at the top of the house; it was lighted through a small window, concealed from sight without by a stone parapet. The window therefore looked upon a blank wall three feet off. Not a ray of sun could penetrate the room; all the light it received was reflected from this parapet, that was covered with mildew and lichen. In Queen Anne's time, mansions were erected with strict adherence to proportion; and if servants' rooms were needed, they were crowded into the roof and hidden from sight. The tall windows belonged to staterooms and the dwelling-rooms of the gentry. Those who ministered to their wants were stowed away in out-of-the-way corners, lighted through passages, from staircases, by panes of glass let into the roof. Anything was good enough for them.

'You see,' said Miss Raffles, 'the window is nailed up. That's Mrs Grundy's doings. The servants' windows all look out on the leads, the gutter that runs round the parapet, and they could get in and out and run round and pay each other visits just as they liked—and there was some goings-on, I can tell you. So Mrs Grundy had the carpenter up, and he screwed up all the windows that they don't open any more.—Lor bless you, it don't matter so far as air goes; we are at the top of the house, and that ought to be the airiest.'

Josephine seated herself on her bed and leaned her head in her hand. This was the hardest trial of all—not to have a room to herself. If she could have been given the smallest garret chamber, in which she could at times be alone, it would have been endurable; but she felt that this was more than she could bear, to have no privacy day or night.

'I hope,' said Miss Raffles, 'you'll get on with our mistress. She ain't bad if you get the right side of her.—But mind you, keep on terms with Mr Vickary, the butler; he well nigh rules the mistress. She thinks him the most dutiful and faithful and excellent man. She takes his advice on everything; and if he don't like a servant,

it ain't long that servant remains in the house.—I don't think much of Mr Vickary myself. They say he has had two or three wives, and has them still stowed away in different parts of the country unbeknown to each other. Mr Vickary is that deep in the mistress's confidence that she lets him manage her money matters for her—leastways, in household expenses.—Hark! There's the bell ringing for us. Mrs Grundy has a wire to the top of the house, and calls us, if we go up just now and then to lie down and read a novel. She thinks now we've been too long; or perhaps the mistress wants to see you. We won't go down at once. Let them wait. You haven't unpacked your box yet, nor I seen what you have got. I say, have you a photograph of your young man?—Drat it! there's the bell again. I suppose it is missus, so we must go down; or—I say—if you give me your key, I will unpack your box for you.'

Josephine went slowly down-stairs without answering the loquacious Jane. Her heart sank within her. Would she be able to endure this association with chattering, empty-headed housemaids, conceited and pert footmen, and a tyrannous, unprincipled butler? Mrs Grundy struck her as a formal, dull woman, whose chief ambition was to stand well with her mistress and retain her place. If Mr Vickary lorded it in the house, Mrs Grundy would shut one eye to his misdeeds.

Josephine had taken off her wedding ring when she left Hanford. She carried it hung round her neck by a small silk ribbon. It would not do for her to wear it. The sight of the ring would provoke questions which it would be difficult for her to answer.

The housekeeper was at the foot of the back-stairs. 'Miss Otterbourne desires to see the new lady's-maid.—You have no need to wear a cap. A lady's-maid is not required to have one. Follow me, Miss Cable.'

Mrs Grundy led Josephine out through a side-door upon the main staircase. The back-stairs were exceedingly tortuous and steep, so tortuous and steep that it was difficult to descend them quickly without a fall. The grand staircase occupied a well in the middle of the house; the flight was broad, the steps deep, the rise slight. The steps were carpeted with rich pile purple and crimson and maroon.

Miss Otterbourne sat in the great drawing-room, a lofty and very stately room, that at first glance reminded Josephine of the parlour at Brentwood. It had in the centre a glass chandelier, encased in yellow gauze, and looked like a gigantic silkworm's cocoon suspended from the ceiling. Large and handsome oil-paintings covered the walls. The furniture was gilt; curtains and chairs and sofa-covers were of crimson satin.

At the end of the room was a fireplace with a wood-fire burning cheerfully in it; and near the fire, at a small table, on which was a lamp, sat a very little lady, with white hair done into barrel-curls about her brow; dressed in slate-gray rich silk, and wearing a handsome shawl over her shoulders.

'Grundy,' said Miss Otterbourne, 'may I trouble you to ring the bell for William? I want another log putting on the fire, and the pieces

of half-burnt wood heaping together with the tongs.

'Certainly, miss,' answered the housekeeper, and rang the bell.

'Oh,' said Miss Otterbourne, 'is this the young person recommended to me by my sister?' She put on her glasses and looked at Josephine. The room was so vast, the light from the lamp so slight, that she could not see much of Josephine. 'Oh—you look rather young and inexperienced. But of course my sister—that is, Mrs Sellwood—knows. I rely on her. I hope you will conduct yourself satisfactorily.—Oh, William, another log, please. I believe there are some still in the wood-basket.—Mrs Grundy, you will see that this young person has refreshment. She need not enter on her duties till to-morrow. She is probably tired with her journey from Hanford. I have never been to Hanford myself. I do not care to leave Bewdley, as the vibration of a railway upsets me.—Dear me! Grundy, will you touch the bell again? I want to tell William to make quite sure the fire is out before he goes to bed. I suppose, Grundy, the horses can hardly be taken out so as to give me a drive to-morrow? they have been to the station to-day for this young person.—That will do, Grundy.—I hope you will conduct yourself well, Cable. My servants are tried and trusty. You can always refer in all matters to Mrs Grundy or to Mr Vickary; they know my tastes and opinions.'

When the housekeeper left the room with Josephine, she signed to her to attend her in the little parlour which she occupied herself.

'You may sit here,' she said graciously, 'for a while. I will talk to you, and you can listen. I will tell you what you have to do.—Miss Otterbourne is a very kind mistress, if you conduct yourself properly; that is, if you satisfy Mr Vickary and me. Miss Otterbourne has the greatest regard for my opinion and for Mr Vickary's. Now, mind, you never complain to me of anything Mr Vickary says or does; nor of anything that goes on in the kitchen, about broken meat or so on; nor about the dairy. The dairymaid manages that, and it is no concern of yours. You are lady's-maid, and it is no concern of yours what goes on outside your department. All that is my affair and Mr Vickary's. Live and let live, say I.—Now, mind, you don't try to disturb the mistress's confidence in Mr Vickary or me; for if you do, it will be so much the worse for you. You will very likely have to leave without a character.'

Josephine's head was sinking on her bosom; a feeling as if she had been struck on the head and stunned, deprived her of the power of speech.

'A lady's-maid,' pursued Mrs Grundy, 'has a place so near her mistress's ear, that she can make herself very unpleasant, or the reverse, to her fellow-servants.—Now, please to remember that all will go pleasant if you don't say anything but good to the mistress about Mr Vickary and me. If, however, you attempt any insinuating and countermining, it will be yourself as will suffer. You understand that?'

'May I have a postcard, Mrs Grundy?'

'Certainly, if you have a ha'penny to pay for it. What do you want it for?'

'I promised to send a line to—to Mrs Sellwood, when I reached this place.'

The housekeeper produced the card, and indicated ink and a pen.

Then Josephine took the pen, dipped it, wrote the address dreamily, turned the card, and on the other side inscribed these words only:

'Yes—winkles, cockles, oysters.'—J. C.

OTTO OF ROSES.

ROSE oil, or attar, ottar, or—more commonly—otto of roses, is one of the most exquisite of perfumes, and, if obtained in its pure, unadulterated state, certainly one of the best, and withal one of the most expensive essences furnished by nature. At the present time, the market value of the finest rose oil is about nineteen pounds sterling per pound, this being the wholesale price. Although greatly appreciated, especially by the fair sex, comparatively little is popularly known regarding its origin and the conditions under which it is obtained.

Otto of roses is prepared in the East, especially in India; but it is also largely manufactured in Europe. Some rose oil is extracted in Southern France; the principal place of origin, however, is South Bulgaria. When crossing the Balkan Mountains southwards by the only road practicable for vehicles, the well-known Schipka Pass, of evil notoriety since the last Russo-Turkish war (1877-78), on account of the fearful loss of life which its defence entailed, the traveller sees opening out before him the beautiful valley of Kasanlik, bountifully provided by nature, in which the Bulgarian rose oil is prepared. The culture of the rose of South Bulgaria—or, as it is now known, Eastern Roumelia—extends over nearly one hundred and fifty towns and villages, distributed in a circumference of from five to six days' journey, and the centre of which is the town of Kasanlik, other important towns being Karlova, Tschirpan, Stara-Sagora; but the valley of Kasanlik proper supplies most of the rose oil obtained, and certainly the best descriptions of this precious essence.

The species of rose mostly cultivated in Bulgaria, and used for the manufacture of rose oil, is that known as *Rosa moschata*—as a rule, of light pink colour, rarely white, and not very full in bloom. The rose oil found in the European market mostly comes from Southern Bulgaria; the oil produced in the East, and in India especially, being used in the land of its origin. The oil derived from *Rosa provincialis* in Southern France is also of exceptional quality, but not only much dearer than the Bulgarian product, but obtained in such small quantities that the whole of it does not cover the wants of the districts where it is manufactured. It should be mentioned that efforts have been made in some parts of Germany to produce the oil; but the success attending them cannot be called very brilliant, for it was found that at least two thousand pounds-weight of rose-leaves, but more frequently double that quantity, were required to manufacture one pound of otto

of roses. The rose used in the production of Bulgarian rose oil is in bloom during May and June. It succeeds best on sunny hillsides, covered with a sufficient layer of medium loamy soil. The rose-bushes when fully grown reach a height of six feet, and are planted in rows a foot and a half apart at intervals of three feet. They must be carefully attended to from autumn to the time of the harvest. As a rule, rose oil obtained from villages more highly situated possesses a higher freezing-point and a more intense but at the same time more pronounced smell; whilst the product of the lowlands has a lower freezing-point and a milder, finer aroma, and is consequently preferred. These several properties of rose oils must consequently be blended, in order to obtain a quality possessing the fine aroma and other properties inherent in a perfect oil. Great experience is therefore needed in manipulating the article, and this knowledge is all the more requisite when large quantities of rose oil are required. An important factor in the success of the rose-oil harvest is the weather prevailing during distillation, always supposing that the rosebuds have not previously been injured by frosts, lengthened dry weather, or from other causes. If these facts are borne in mind, it is apparent that it is impossible to fix the price of rose oil before or during the time of distillation. That can only be settled after the harvest is completed, mostly during July, and is arranged between the producer and the exporter, after weeks of negotiation. Rose oil thrown into the market before that time is oil from previous years, generally of less value, which it is thus sought to get out of hand before the season's arrivals.

Cool and rainy weather is the best time for distillation, as it prevents rapid blooming, and thus extends the time of harvest, and enables the producer to gather his roses gradually, at the same time that it increases the bulk of the harvest. The state of the weather during the process of distillation is of great importance, the yield varying from one *metikal* of oil from eight *okas* of rose-leaves to one *metikal* of oil from eighteen *okas*;* in other words, to obtain five grammes of otto of roses, between ten and twenty-three kilogrammes of rose-leaves are required. In the most favourable case, therefore, two thousand pounds of rose-leaves are needed to distil one pound of otto of roses; in the most unfavourable instance, four thousand six hundred pounds of leaves are wanted to make one pound of the essence. It will be easily understood that, in order to obtain such large weights of the light leaves of the rose, large tracts must be under rose cultivation. At the same time, a great number of distilling apparatus must be employed and suitably distributed. The flowers ought all to be collected, if possible, before sunrise, so as to retain the ethereal oil, which otherwise quickly evaporates if the sun's rays become too powerful. There have been schemes for erecting manufactories of rose oil in Bulgaria; but from what has been stated, the folly of such attempts is

apparent. As a matter of fact, there is not a single establishment of such a nature in the whole of Southern Bulgaria, the question of expense, long distances, and insufficient means of communication, and consequent loss of aroma by transport, all operating against the erection of rose-oil 'factories.' The peasants gather the roses themselves, produce the oil as a kind of domestic industry, and sell the finished product after the harvest. Some exporters pretend that they rent the best rose-fields from the owners, so as to secure a connection; but this is not true. What does happen is this, that respectable dealers in rose oil make advances to peasants upon whose honesty they can depend; and thus they are sometimes able to secure the finest descriptions of the essence; for, as in most industries, there is a deal of adulteration going on in the manufacture of otto of roses. Honest producers erect their distilling apparatus in the open fields; but there are many who distil geranium oil over roses in carefully secluded distilleries, for purposes of adulteration. Of course such men are avoided by respectable merchants; but still the fact remains that much adulterated oil gets into the market. Oil or otto of geranium, also called *idris* oil (from the Turkish *idrischajah*), is produced in India, especially in Surat, by distillation of andropogon grasses with water. The scent of the several products of distillation varies according as more or less of the herbage of other plants is introduced during distillation, no care being taken to pick them out before distilling. Although the government of Eastern Roumelia, as a measure of protection, exacts a heavy duty, amounting to two hundred per cent. of the value, upon the introduction of geranium oil into the rose districts, a great deal is smuggled in, those dealers who have the greatest interest in promoting adulteration being the chief offenders. It is a pity that the government does not devise more energetic measures against the importation of geranium oil; but to a great extent the mischief may be, and is, counteracted by the policy of respectable merchants of buying rose oil only of producers upon whose honesty they can thoroughly rely.

During Turkish rule, there was, besides the tithe levied, an export duty of eight per cent. *ad valorem* upon otto of roses; but this has gradually been decreased to one per cent., whilst the tithe has not been exacted for the last two years, its place being taken by a ground-rent adjusted according to yield. The average annual yield of the Bulgarian rose-oil harvest may be taken at between three thousand two hundred and three thousand five hundred pounds. During good years, such as 1879 and 1885, it rose to over five thousand pounds. In bad seasons, owing to frost, hail, or a long spell of hot weather and drought, such as the year 1882, the production scarcely reaches sixteen hundred pounds. An exceptionally favourable year was 1866, when about six thousand pounds of otto of roses was produced. The prosperity of a South Bulgarian village or town is frequently estimated by the pounds of rose oil made there. The finished rose oil is taken from the places of production, where it is acquired by the exporters, in round flat copper bottles, tinned over and most carefully soldered up, so-called '*estagnons*,' in sizes holding

* The *metikal* is a gold or pearl weight equal to about 4·5 grammes; the *oka*, a liquid measure, equal in Moldavia to 1·52 litre, in Wallachia 1·28 litre.

from one to six kilogrammes of the oil. It is still taken on the back of horses or mules over Adrianople to Constantinople, whence it reaches the European market.

WYTHRED'S WHARF: A THAMES-SIDE TALE.

CHAPTER II.—THE WHARF-OWNER'S STORY.

MR LINTOCK'S house, an old mansion in the neighbourhood of Greenwich Park, was surrounded by a high garden wall. The great iron gate leading into a large courtyard might have been the entrance to a prison; and its gloomy aspect filled Percy Overbeck's mind with vague fears. But when the front door was thrown open, and he stepped with the wharf-owner into a broad, well-lighted hall, all sense of dread was instantly dismissed, for at the foot of the oaken staircase stood Bertha Lintock. She was a tall, graceful girl of nineteen; and she always looked her best, in Percy's opinion, at these moments of greeting with her father; not that her dark eyes were wanting in their eloquent expression of welcome when they met his. But she simply said, in a charming tone of well-feigned surprise: 'Mr Overbeck? How very kind this is!' as she took his proffered hand.

Overbeck could not fail to notice, from Bertha's anxious glance at her father's face, that she guessed something had recently upset him. Was it possible that the girl had any suspicion that such a trouble as this, which he had accidentally discovered, weighed upon her father's mind? Bertha's first words, when they were alone in the drawing-room before dinner, 'Have you remarked the change in my father? To-night he does not seem the same man,' convinced Overbeck that she had been told nothing.

'He is greatly changed,' replied the young man. 'I am much concerned, Miss Lintock, about him.'

'Can anything be done?'

'I sincerely hope that your father will talk to me about himself this evening.—I shall draw him out,' he added laughingly, to reassure her, 'over our cigar.'

Bertha's eyes expressed her sense of gratitude.

During dinner, Mr Lintock was deeply abstracted; in fact, he left Bertha to do all the talking; so she and Percy conversed together to their hearts' content.

As soon as dinner was over, Bertha rose to leave the two men to their wine. While Overbeck stood holding open the door, the girl gave him one of those appealing looks as she passed out which he remembered long after.

'Now that we are alone,' said Mr Lintock, 'will you give me your attention for a few minutes? I want to tell you of the face that haunts me. I have intended for some time speaking to you. The incident in the train to-night has decided me.'

Overbeck having drawn forward an armchair, lit a cigar, and looked attentively at Mr Lintock—'I am deeply interested,' said he.

After a moment's pause, the wharf-owner asked: 'Do you remember, Overbeck, an individual named Clogstoun?'

Overbeck shook his head.

'He was a workman at the wharf. I dismissed him for insobriety.'

'A dark person,' said Overbeck doubtfully, 'with black hungry eyes?'

'That's the man,' was Mr Lintock's answer, 'as you describe him! That's the man whose face I saw at the carriage window to-night.'

Overbeck looked searchingly at the wharf-owner. 'Not really? You mean his ghost.'

'I mean the man's face. I have no belief in disembodied spirits.'

'But,' said Overbeck, 'unless the man is dead—'

'He is not dead. He threatens me: he has threatened me for months. I see his face everywhere,' said Mr Lintock, glancing round the room with that haunted look again—'everywhere, and always threatening.' For a moment the wharf-owner placed his hand across his eyes, as he had done in the railway carriage; but quickly recovering himself, he said: 'Clogstoun had often been employed on the wharf, and as often discharged, owing to his drunken and quarrelsome habits. He insulted every one whom he came across, when excited by drink, until it was thought that he must be out of his mind. When at last I refused to listen to his appeal to be given another chance, he muttered: "You shan't ruin me for nothing, Mr Lintock; you had better think it over." I did not like his look then: there was something strange in his eyes—a look that seemed to me to contain a touch of insanity. A few days afterwards he accosted me in Thames Street; and there he loaded me with insult, and vowed that he would not rest until he had taken my life.'

Overbeck started up with an angry exclamation on his lips: 'The man is mad!'

'I treated this threat, at first, as the silly utterance of a drunkard,' continued Mr Lintock. 'It gave me at the moment no real uneasiness. But as time went by, his conduct began to alarm me. He again accosted me, and became more insolent. I warned him that I should be forced, if he did not cease to annoy me, to take the matter before a magistrate.'

'Ah!' said Overbeck excitedly, 'you did right.'

'But that has had no effect. He still dogs my footsteps if I venture out after dark. I see his eyes fixed upon me at every corner. And unless something is done to put a stop to it,' said the wharf-owner, 'I shall fall ill. My duties at the warehouse are a sufficient wear and tear, without Clogstoun's wretched, drunken face threatening me night and day!'

Overbeck was pacing up and down the room. He could not rest with the thought of Mr Lintock harassed and insulted at every turn. 'Does any one know, except ourselves,' said he, 'about this affair?'

The wharf-owner reflected a moment. 'Duckett, I think, suspects something: no one else.'

'Not even your daughter?'

'I have never,' said Mr Lintock, somewhat evasively, 'spoken to her on the subject.'

After a moment's pause, Overbeck asked: 'Can you give me Clogstoun's address?'

The wharf-owner looked up in surprise. 'It never occurred to me, Overbeck, that he had any. In what hole or corner in London would he lodge? His appearance was no better, when I saw him last, than that of a vagabond or tramp.'

'He must be known to the police.'

'So I hope, for he has fallen very low. He was seen by Ducket last on London Bridge contemplating, I should think from the account he gave me, suicide or something worse. For is there a crime,' added the wharf-owner, 'that one so profligate would not commit? The very thought makes me shudder! If you had seen the man's face to-night, the dread would have laid hold of you—as it has of me—that my life is in danger.' He spoke in a very earnest tone. But there was no trace of agitation in his manner now. His words, 'My life is in danger,' seemed to express the conviction of a sound-minded man capable of mature reflection.

'You are seriously of opinion, Mr Lintock, that the face at the carriage window was real, and not imaginary?'

Mr Lintock, with a thoughtful look bent upon the ground, replied: 'That is a question to which I wish, Overbeck, I could give you a satisfactory answer. Is it real? The face, as I tell you, threatens me so momentarily—so unexpectedly: it seems real—only too real.' Then he suddenly added with a searching glance: 'You do not think my brain affected? Well, well; it's not surprising if you do. I have enough worry at the wharf, sometimes, without this one, to drive me crazy.'

Overbeck promised to take the matter earnestly in hand; and after some further conversation on the subject, of a reassuring nature, Mr Lintock proposed that they should go and join Bertha in the drawing-room.

She was at the piano. But she rose when they came in, and gave them tea, and paid some little, delicate attentions to her father, as a devoted daughter alone knows how. Then she returned to the piano and began to play a sonata that seemed like an accompaniment to her dreamy thoughts.

Presently, Percy Overbeck went softly to a chair beside her, for the wharf-owner had fallen asleep.

'He has spoken to you,' said the girl, still accompanying her dream. 'Has he not?' Her face was troubled, and tears stood in her eyes.

'We have talked the matter over. He has told me everything. Do not be distressed: there is really no need. Have confidence in me. Will you—as an old friend?'

There was little occasion to have asked this. Bertha's face, though troubled, had not lost its trustfulness. 'Why should you doubt that?' was the girl's reassuring reply. 'For weeks past I have wished that my father would speak to you. I knew that something disturbed him. But he is so considerate! He has done his best to hide it from me, fearing to give me the least alarm.'

'It is about a discharged workman—it is best that you should know—a fellow who threatens your father. The affair has unnerved him; but I hope to put matters right. You are not frightened?'

'No; not now,' said Bertha in a low voice—'not now, that you are lifting half the burden off our shoulders. How good it is of you!'

She was irresistible. Overbeck answered earnestly: 'There is no burden that I would not bear, Bertha, for your sake.'

'For me?'

'Yes, Bertha. I—I love you.'

There was a flutter of the dark eyelashes, but the girl did not raise her eyes. The accompaniment to her dream was almost inaudible now. Was the reality—the conviction of her love for Percy Overbeck dawning upon her?

The sonata was finished; and Mr Lintock awoke out of his nap. It was time for Overbeck to bid his friends good-night, for he intended to return by train to London. He caught a sweet timid glance from Bertha as he took his leave.

When the train was approaching London Bridge—and the glow of lamplight in wide and narrow thoroughfares threw a red reflection over the great city—Overbeck thought of the countless mysteries that lay hidden, in dark courts and alleys, in the midst of all this glare. Was this face which haunted Mr Lintock's life, thought he, in one among those shadowy by-ways?

CHAPTER III.—THE THREATENING FACE.

Percy Overbeck's visit to Greenwich had effected a noticeable improvement in the wharf-owner's state of mind. The haunted look left him; his expression was altogether less careworn, and it would almost seem as if those strange forebodings which had lately perturbed his brain troubled him no longer. His interest in the business of the wharf returned, and Ducket found him one evening working in grim earnest at his desk.

'Well, Ducket,' said Mr Lintock as the foreman came in, lantern in hand, to light his lamp, 'who is on duty to-night?'

'I'm on duty, sir, until twelve o'clock.'

'Not alone?'

'Why, yes. The fact is, sir, I'd a special object in relieving the night-watchman.'

The wharf-owner's glance expressed surprise. 'What object could you possibly have?'

Ducket, still occupied with Mr Lintock's lamp, answered without raising his eyes: 'I'm expecting Mr Overbeck.'

'At what hour?'

Ducket handed the wharf-owner a slip of paper. A single line, which he recognised as Percy Overbeck's writing, ran as follows: 'Ten p.m. Wait at wharf.—P. O.'

Mr Lintock's face while reading this underwent a change; but recovering himself quickly, he said: 'Do you know why Mr Overbeck is coming here to-night?'

The lamp was now lighted; and Ducket, while placing it upon the wharf-owner's desk and adjusting the shade, replied: 'It's about Clogstoun. So I naturally suppose; for there ain't anything else that I can think of would bring him here at that time o' night. The note, just as you see it, was given to me this afternoon.'

'Who brought it?'

'One of Mr Overbeck's clerks.'

The wharf-owner looked thoughtful. 'I have plenty to keep me busy till ten o'clock,' said he, throwing a glance over the papers before him. 'Mr Overbeck is coming, depend upon it, about Clogstoun. I shall wait and see him.' Then taking up his pen, he added: 'You'll be within hearing, Ducket, in case I want you?'

'You've only to touch your bell, sir; I shall be sure to hear.'

It was the first time for many weeks that the wharf-owner had worked alone in the counting-house after dark; and it was not surprising that the dead silence and solitude, when he occasionally stopped and looked up from his desk, should remind him of the threatening face of Clogstoun. He had dismissed the clerks, for he had no need of assistance; every detail referring to the wharf was entered in the books upon the shelves around him. Still this dead silence and solitude seemed each moment more oppressive. Mr Lintock looked at his watch. It was past nine. What could Ducket, he wondered, be doing so noiselessly down-stairs? It was strange that he had neither heard the sound of his footstep nor of his voice. The wharf-owner thought: 'If Ducket would only sing or move about the warehouse, the sense of loneliness and dread which is creeping over me would be removed. Shall I touch the bell?'

He tried manfully to dismiss this feeling and to find absorption in the work before him; but there now arose in his mind, more vividly than it had ever done, this haunting face. He imagined the figure of Clogstoun, as Ducket had described it, leaning over the parapet on London Bridge. Was the man there to-night? The wharf-owner could not resist the temptation to stretch out his hand and draw back the curtain from his window and look out upon the dark river. The lights flickered on London Bridge; but they were dim—too dim to have enabled Mr Lintock to distinguish one figure from another. Yet he fancied that, dark as it was, he could discern a shadowy form standing near the centre of the bridge, and that the form resembled that of the man with whose face he was so painfully haunted. He dropped the curtain with an angry gesture. 'What if Clogstoun is there?' he exclaimed aloud.

But the wharf-owner's hand trembled now; he could not write. The black horrors which he had resolutely overcome began again to crowd his brain like imps of darkness; the more he tried to chase them from him, the more they swarmed. His imagination awakened into terror at last. A firm conviction took hold upon him: it was like a nightmare which no strength of will could drive from his brain: Clogstoun was staring at him through the glass partition in the clerks' office like a cat watching its prey!

Mr Lintock sprang to his feet. At this moment the great gate-bell in the courtyard of the warehouse began to ring.

Laws have been passed placing large powers in the hands of local and parochial Boards, by which vast improvements have been made, and immense sums of money spent in such works as the sewerage of towns, laying down systems of water-supply, and the clearing away of wells in urban places. Hospitals also have been erected, both general and special, and everything that skill and science can devise is now devoted to the battle with disease and dirt. Nothing is more costly to the individual or the State than disease, and whatever may be said or done in the interests of the health of the nation or town should receive the hearty support of all.

Among the great middle class, much can be done to promote the health of the family and the community by the exercise of a little wisdom and good sense. With that end in view, the following hints are given as being suitable for the information of those who are about taking or buying a house, or building one for themselves or others.

In selecting a house, or the site for a new one, remember that where the sun will shine on the house for some hours a day, one element of good is secured, especially if the sunshine enters at the windows of the living-rooms, or rooms most used during the daytime. After the aspect has been found to be suitable, and that a plentiful supply of sun and air is insured, attention should be given to the general position and construction of the house. If the ground is at all porous, a layer of concrete not less than six inches thick, and composed of cement or lime and broken bricks or gravel, should be spread over the whole of the ground covered by the building. This will prevent the passage of ground-air up through the floors. Air will travel through the ground for some distance, and, as it invariably becomes contaminated by taking up carbonic acid gas in its passage, is not suitable for inhaling. The house acts as a sucker on the ground; and if, unfortunately, the site is one on 'made' ground—that is, composed of all the refuse of a town—the ground-air becomes the medium of disease. No houses should be built without a well-ventilated air-space between the earth and the ground-floor, especially if the layer of concrete on the surface be omitted. The walls should be built of good hard-burnt bricks or non-porous stone set in lime or cement mortar. Common under-burnt bricks or porous stones hold moisture, which evaporates with a rise in the temperature, and so chills the air in the house. If the bricks or stones of the walls are suspected of holding moisture, the whole of the external surfaces should be covered with cement, or tiled or slated above. The foundations of the walls should rest on thick beds of concrete bedded in the earth; and to prevent the ground-damp rising up the walls, a damp-proof course of slates in cement or a bed of asphalt should be laid in the full thickness or width of the wall just above the

HEALTHY HOMES.

BY A SURVEYOR.

THE study of health is now elevated to the position of a science, and everything tending to promote good health in individuals or communities is welcomed. Since the study of sanitation commenced in real earnest, some years since, the most conclusive proofs of the benefits following the adoption of suggestions of the early sanitarians are the decrease of certain diseases, and the consequent diminution of the death-rate.

ground-line. Dryness in this climate is so essential to health, that any building which in its floors walls or roof, sins by admitting moisture, should be rejected as a place of residence by those who value their health. In tropical climates, buildings are constructed to keep out the heat; but here, we build to retain the heat and keep out the cold.

The roof of a house is sometimes a most troublesome feature. Usually, the trouble is caused by some scampish action of the speculator who built the premises, and by the saving of a few pounds to himself, causes the expenditure of money and trouble to rectify his neglect. All roofs should be formed with slopes to a good pitch, not less than thirty degrees for slates, or forty degrees for tiles. It is no unusual thing to find speculators' houses with slopes as low as twenty degrees on the roofs. The joints between the tiles or slates and the parapet walls and chimney-stacks should be covered with lead or zinc tacked into the joints of the brickwork, or into grooves cut in the stone. The ordinary builder's style is to cover the joint with a fillet of cement, and for out-buildings this may do, but never for dwelling-houses. The iron gutters at the eaves of the roof should be cleaned out once a year, as also the lead or zinc central gutters. All sorts of disagreeable things collect in these gutters, and if not carried by the rain down the pipes into the drains, stick in the sooty mud, and cause obstructions and overflows. The pipes from the eaves to the drains should be of metal, iron, or lead, and quite disconnected from the drains by discharging the water over a trapped gully at the end of the drainpipe. Rain-pipes connected immediately with the drains are really vents for sewer-air, and occasionally puffs of this deleterious gas may find its way in at attic windows, if the old-fashioned method of connecting the rainpipe with the drains is in force.

After having examined the shell of the house, the plan deserves consideration, and here but little advice can be tendered, as individual peculiarities demand peculiarities of plan in a residence. The kitchen offices should be pleasantly placed, and not, as in so many old houses in towns, buried away in a basement. Condemn once and for all any house having rooms for living in below the level of the outside ground, especially if the soil be clay; nothing but ill health and depressed spirits can result from the use of rooms so situated. See that the air has free passage through the house, and that the staircase and passages are well lighted; and while noticing the light on the staircase, see that there are flat landings, instead of what are technically known as 'winders,' where the stairs turn. Each room should have good-sized windows, fitted with sashes which run up and down, in preference to casements, which are hung on hinges. With sash-windows, a better control of the admission of air can be maintained, provided both the sashes are hung. Sometimes the top sash is fixed, especially in old houses. This should be altered, as if only the lower sash is hung, a stagnant body of air will hang about the upper part of the room and cause many a headache. Under ordinary conditions, the

wood-sashes fit so badly that a plentiful supply of fresh air is admitted; but if the air is found vitiated in a room, a simple means of admitting more air without draught can be managed by substituting, for the narrow bead nailed on the top of the wood-sill of the window-frame, a piece of deal about three and a half inches deep; by this means the lower sash can be raised three inches without causing an opening at the bottom, as would be the case if the ordinary narrow bead were on the sill. This causes an opening at the point where the upper and lower sashes meet, and so a current of air is admitted, and by entering at the meeting-rails—as they are called—gets deflected up towards the ceiling, instead of pouring in, in a horizontal direction.

Ground-draughts are frequently caused by the bad fitting of the floor-boards. Notice whether the joints between the boards are wide or narrow, and that the skirting fits tightly down on to the floor. Many colds may be prevented by having the joints between the floor-boards filled in with narrow slips of wood or putty.

If the walls of the rooms are papered, determine if possible whether the colours on the papers are arsenical. If you doubt them, have the paper varnished, or, better still, strip it all off. Remember that green is not the only colour in which arsenic is used, but that in others, such as pearly gray, it forms with some makers a large element. In ordering papers for repapering, ask for *non-arsenical* coloured papers, and receive a guarantee with them that they are such. The air we breathe should be as free from contaminating matter as possible, and by having non-arsenical paper on the walls, one great source of contamination is avoided.

Another and very insidious contaminater of the air in rooms is the ordinary gas-fitting, whether chandelier or bracket. Chandeliers which slide up or down are the greatest sinners, for the packing which is supposed to keep the telescope air-tight, is, after some years' wear and tear, often found very defective, and allows the gas to escape and mix with the air of the room. Ascertain whether the pipes conveying the gas from the meter are composition or iron; in old houses, composition tubes are the rule, and these have been found at times eaten away in places by rats or mice. Iron tubes are the best, but with these it is necessary to see that the joints are well stopped with red-lead and painted. Another source of danger is sometimes found where an old gas-fitting has been removed and the tube simply stopped with a plug of wood. This invariably means leakage. Remove the plug, and put a metal cap screwed on with red-lead in the thread, and so prevent risk.

The means of storing water and the supply to the various parts of the house will require very careful examination, as upon the purity of the water will depend the health of the family. When the water is received from a Water Company, the quality is usually sufficiently good for drinking purposes, and it is the duty of the householder to see that it does not take up deleterious matter after leaving the main pipe of the Company. The storage tank or cistern, which as a rule is placed at the highest point of the house, and frequently in the roof, should be either of iron or slate, and of these, iron

is the better, as a slate cistern is more liable to leakage. Cisterns made of wood and lined with lead or zinc are not good, and if the water stands in them for any considerable period, must take some of the metal in a soluble form. All cisterns require cleaning at stated periods, and if lined with zinc or lead, care must be taken not to scrub off the surface of the metal. Where the cistern is in the roof or in a large open space, a cover is necessary, to prevent dust or other impurities from finding a resting-place in it. The service-pipe for the house is taken from the bottom of the cistern, and it will be advisable to trace this and its branches down the house, to discover whether any damp patches on the walls or ceilings are caused by leaky joints.

The water supplying the water-closets should never be drawn direct from the cistern to the pan, but should be delivered into a smaller cistern in the water-closet, holding about two gallons, and this should discharge the whole of the water in it every time the handle is raised. A good siphon form is the best. The taps over the sinks should be of the screw-down kind, as, although they are a little more troublesome to use, there is less chance of wasting and less liability of leakage. It is a good plan to put a stop-valve on the service-pipe from the cistern, to shut off the water in case of leakage in any of the branch pipes or fittings. The wastepipes from the scullery and other sinks should not enter the drains, as, if they do, sewer-air is sure to find its way into the houses; but they should be cut off just outside the wall, and bent to discharge over a gully fixed in the paving, and up to which the drain-pipe is laid. If a puff of sewer-air is driven up the pipe connected with the gully, it will harmlessly die away in the open air, instead of finding its way into the house through the wastepipe. The wastepipe from the bath should be treated in a similar manner, by being cut off from the drains, and a copper or brass flap should be fixed on the exposed end of the pipe, to prevent draughts or insects finding their way up.

The water-closets require very careful examination, and especially their connection with the drains, which is not always visible. The apparatus should be one with few, if any, moving parts except the handle and wires for working the water-supply. The pans known as wash-out or flush-out are very good, their worst fault being a tendency to retain substances, instead of allowing all to be cleared out with one discharge of the small cistern. The soilpipe should be fixed on the outside face of the wall, and not inside the house, especially if it is of iron; a mere pin-hole in the iron will allow the foul air to escape; and the joints, if not properly cemented, will also provide an escape for foul air. The soilpipe is connected at the end with the stoneware drain, and the junction should be so made that the change of direction from the vertical to the horizontal is easy, and not a sharp angle, where deposits may accumulate. The upper end of the pipe should be above the eaves-level of the roof, and either left open or finished with a fixed ventilating cowl. A simple cross or T piece of pipe is quite sufficient for the purpose, with copper

wires fitted in the open ends, to prevent birds building their nests in the pipe. Sometimes the water-closet and bathroom are one apartment, and provided the water-closet is a good one, and the soilpipe properly ventilated, the arrangement is not a particularly evil one. But the wastepipe from the bath must not be allowed to enter the soilpipe, nor must it be connected with the drain, but should be carried down the outside wall to a gully, over which it should discharge. Every water-closet should be fitted with a window or skylight communicating with the outside air, and the window or skylight should always be kept open a few inches. The simplest bath fittings are the best, and should always include a tap for hot water. The screw-down kind are less liable to leakage.

The drains which lead the water and refuse-matters from the waste and soil pipes to the main sewers require to be examined, as far as their buried state admits, with great care, as upon the efficiency of the drainage system the health of the household will to a great extent depend. These drains being hidden away underground, are not, as a rule, put together with the care and accuracy which their importance demands. Any labourer on a building is, in the opinion of the speculating builder, competent to lay drains; and to this individual's—and his employer's—skill or want of skill may be attributed much of the disease generated through breathing sewer-air. A drain requires as much care and forethought in its construction as any other piece of workmanship. The pipes should be laid in as straight lines as possible; and where bends or changes of direction are necessary, they should be easy and of long radius, formed with bent pipes, and not made up with straight lengths. Where the pipes pass under the house, they should be laid in a bed of concrete, and the joints well cemented on the outside. The fall of the pipes from the highest point to the sewer should be gradual and even throughout. A fall of from two to three inches in ten feet is the general rule for ordinary house-drains, and will be found ample if the pipes are properly laid. The diameter of the pipes used is usually much too large, six-inch pipes being used where four-inch would do all the work. A drain to be well flushed should run half full at least, and this cannot be attained if the pipes are too large.

All junctions of drainpipes should be made with proper junction-pipes, and not by simply cutting a hole in the side of the pipe for the entrance of the branch. At some point on the drain near its entrance to the sewer, a stoneware siphon trap should be fixed, for the purpose of keeping the sewer-air back from the house-drains; from the top of this trap, a ventilating pipe should be carried to the nearest wall, and continued up to above the level of the eaves of the roof, so that any foul air which gets driven through the trap may find its way up above the roof-level, and so out of harm's way. Always learn from the builder of the house, or some person possessing the knowledge, the course and position of the drains, and where they are connected with the sewer. The information will be worth having; and if a rough plan is made up from the information, and kept handy for reference, a bad smell will soon be

traced out and stopped. If an unpleasant smell is perceived, never rest until the cause is discovered. Do not risk the chance of an attack of diphtheria or typhoid, by allowing the evil to exist. Attack it at once; hunt it to its source, and provide a proper remedy. Do not run away with the common idea that sanitarians exaggerate evils, and that, because our forefathers were content to live under certain conditions, we should follow in their footsteps. Times are changed; new conditions have produced new evils; and it is the manifest duty, as it should be the pleasure of the parent of to-day to provide as healthy a home for his family as his pecuniary means and position in life will allow.

A NIGHT-HALT.

I DON'T think that contributors to this *Journal* realise how widely spread an audience they are addressing. Copies of the great English periodicals turn up in every corner of the world, often remote from civilisation, and unable to account for themselves, but not the less welcome to their discoverers. So, when, on an abandoned campground in the Great Lone Land, I found a torn damp leaf from *Chambers's Journal*, and at the foot of one page a notice to contributors that was in its manner kindly, I had courage to think that perhaps the great audience might like to know what manner of camp it was, and that travellers in distant lands and on remote oceans would be interested.

The Canadian North-west is not peopled with very savage races, nor is it wholly unexplored, like some parts of the empire; there are villages every two hundred miles or so, and trails between them good or bad according to season. There are wide tracts where the houses are in sight of each other; and all over the plains the survey-marks and buffalo bones lie together. Sometimes the trail for many days' march is over plains level as the sea, or rolling land verdureless and stony; sometimes the country is like a stormy ocean, with all the hollows planted with scrubby bushes, or filled with stagnant water, with meagre reeds and alkaline deposits. Large areas are covered with hills; but rarely, and as a great treat, one encounters running-water in a deep ravine. English readers will hardly realise the beauty of running-water in a land where good springs are as scarce as opera-houses.

A stream called Eagle Creek has cut a ravine some two hundred feet deep in a stony plain near the North Saskatchewan, and carved the banks into a medley of grotesque and isolated mounds, strewn with boulders, and nearly void of grass, whose steep and eccentric shapes give the view from the bottom a most singular and impressive contour. The stream itself has evaporated, and left one or two miry ponds, whose stagnant waters feed the few and small shrubs that adorn the bottom; and beside them is a space of half an acre of pleasant grass, with many round patches in it, traces of fires beside which passengers on that lonely way have been wont to rest. How wagons get down the trail to the bottom is marvellous.

The sun has set behind the hills towards the

north-west; the wind is sinking; the foxes are running about, and a crane stands in the untroubled water and looks melancholy. A cloud of dust behind the hills to the east, and the distant tramp of horses, announce that the valley will presently be disturbed; and immediately, a mounted man in a bright cavalry uniform rides to the edge of the hills, and stands out against the sky a beautiful silhouette, motionless as a statue. Then two and two, come twenty mounted men, each with a rifle poised on the horn of his Mexican saddle, and many a glittering point of brass and steel about his harness. At the word of command they dismount, and advance, leading their horses down the slope; and we see behind them five wagons, each carrying two men, and a rearguard of two, who linger behind a bit before they dismount and follow the groaning transport. They are coming nearer now—young, bronzed, and sturdy, their equipment suited to the prairie, but very strange to those who live in cities. One or two wear cavalry breeches, with broad yellow stripes down the sides; but most of them are dressed in dark canvas adorned with brass buttons; and there is a large variety of slouch-hats and western shirts and old red jackets, according to the pleasure of the wearers. All wear riding-boots, spurs, cartridge belts heavily mounted, and big revolvers, with lanyards buckled to the butts and passing over one shoulder.

When they reach the level land at the bottom of the ravine, the mounted men form up in line, and the wagons draw up behind them forty feet apart; a rope is stretched along the line of wagons; and leaving the saddles on the first line, the horses are attached to the rope almost as soon as the teams are unharnessed. Two or three men select a spot by the bushes, where an iron bar is quickly set on uprights five feet apart; and before the sound of the axes has ceased in the bush, three heavy camp-kettles are swinging over a roaring fire. A bell-tent is pitched for the officer in command; the horses are watered, groomed, and fed; and at a last merry order from the bugle, there is a general dash for plates and cups; and knives drawn from belts and boot-legs are ready for an astonishing slaughter of pork and hard-tack. The latter is the western name for that which is known elsewhere as ship-biscuit, and it is partaken in company with strong and hot tea around the camp-fire. The meal is accompanied by an uplifting of blue smoke into the clear sky, and there is a lively fire of chaff in good American and even British dialects. After a decent interval, the horses are hobbled or picketed for the night, and a guard of three men placed on picket duty until sunrise. Blankets are spread out along the saddle-line and in and under the wagons; and before the sounding of the last of three beautiful evening 'calls' has awakened the echoes of the sterile hills, conversation has flagged, and there is silence under the starlight.

The horses are pulling at the grass, roving about, and clanking their hobbles; and the man on duty stands by the fire or glides about among them; and overhead the stars are blazing in heaven, and the dim white aurora is flitting in the north. Then the stars and the aurora pale, and the north-east glows with rose and orange, and the wind wakes up, and the soft

mists rise. Startling all the echoes, making the keen air tremble, waking the summer world, and losing coherence in the distant sky, reveille rings out clear and sharp, a burst of triumphant unexpected music—and the night is gone. Then to successive bugle calls, blankets are rolled, wagons loaded, the horses carefully tended, and breakfast finished; and ere the sunlight warms the ravine, the mounted party is toiling up the hillside, and the wagons are following across the narrow bottom.

Such is a night-halt of a party of Mounted Police under the pleasantest conditions, and while travelling at about forty miles a day. But there are no members of the Force of over a few months' standing who have not travelled *without* night-halts, or under conditions of hardship that it would be difficult for an English reader to realise. Although the statement little accords with those of emigration agents, the climate of many districts is extremely rigorous; and although this does not detract from the value of the crops, the cold is so great in December and January that even an emigration agent would not willingly travel during those months in any part of the Territories. As pioneers preparing for the advance of civilisation, the Mounted Police undertake to suffer discomfort and to perform duties of unexampled difficulty, without the performance of which, the new provinces of the western plains must be, as they were before the white men came—a howling wilderness.

ODD WAYS OF PUTTING THINGS.

CURIOUS ways of expressing ideas in English may be expected from foreigners, as, for instance, when the Frenchman, who paid a call in this country and was about to be introduced to a family, said: 'Ah ze ladies! Zen I would before, if you please, vish to purify mine hands and to sweep mine hair.'

But the various nationalities of the British Isles are sometimes not a whit behind in verbal bulls and blunders, and in what may generally be described as odd ways of putting things. It is said that when Constable's aunt was dying, the good deaf old lady said: 'Anne, if I should be spared to be taken away, I hope my nephew will get the doctor to open my head and see if anything can be done for my hearing.'—A Paisley publican was complaining of his servant-maid that she could never be found when required. 'She'll gang out o' the house,' said he, 'twenty times for ance she'll come in.' It must have been a relative of his who aroused her servant at four o'clock with: 'Come, Mary, get up. Here 'tis Monday morning; to-morrow is Tuesday; the next day's Wednesday—half the week gone, and nothing done yet.'

Taffy often plays amusing pranks with the Queen's English. A Welsh landlord, who for some time had been annoyed by an obstreperous guest, walked across the room to him, and striking the table with his fist, shouted very volubly: 'You haf kick up a row all day here to-night! We was not interfere with you, do we? Efery man here mind his own pizness; yes, by Jing! no.'

Pat of course is proverbial for his eloquent if rather novel and puzzling ways of putting things. A retired army surgeon in the north of Ireland

had a humorous experience of this when often visited by the neighbouring peasants, who were anxious to avail themselves of his good nature and professional skill. One applicant for relief described himself as having 'a great bilin in his troat, and his heart was as if ye had it in yer hand and was squeezin' af it.' 'Plase, yer honour,' whined a barefooted woman, 'I'm in great disthress. I fell down yesterday and broke five of me ribs, an' for the blessing of God, could ye spare me a trifle?' Another patient said: 'Savin' yer honour's presence, me shtomach has gone to the wesht of me ribs.' A traveller being on the box of an Irish mailcoach on a very cold day, and observing the driver enveloping his neck in the voluminous folds of an ample 'comforter,' remarked: 'You seem to be taking very good care of yourself, my friend.'—'Oh, to be sure I am, sir,' answered the driver; 'what's all the world to a man when his wife's a widdy?'

Such specimens of the bull genus, however absurdly expressed, generally seem to convey the intended idea in a pithy and forcible manner, quite unlike the following, which, for concentrated inaccuracy of statement, can hardly be surpassed. This sentence occurred in an account of a burglary in an Irish newspaper: 'After a fruitless search, all the money was recovered except one pair of boots.' A recent critique upon *Othello* had the following: 'The Moor, seizing a bolster full of rage and jealousy, smothers her.'

The beggar was verbally mixed who thus accosted a passer-by: 'Sir, would you please give a little money to buy a bit of bread, for I'm so dreadfully thirsty that I don't know where I am to get a night's lodging.' The same may be said of a country yokel who went to a menagerie to examine the wild beasts. Several gentlemen expressed the opinion that the orang-outang was a lower order of the human species. Hodge did not like this idea, and striding up to the gentlemen, expressed his contempt for it in these words: 'Pooh! he's no more of the human species than I be.'—'Mamma, is that a spoiled child?' asked a little boy on seeing a negro baby for the first time. Another small boy while at play in a garden saw a black snake gliding through the grass. It was the first one he had ever seen. He became greatly excited over it, and rushed into the house crying out: 'Mamma, mamma! there's a tail out here runnin' along without nussin' on it.'

A little girl had been told by her nurse that if she did not think so much by day she would dream less at night. 'But I can't help thinking,' she said; and added pathetically: 'I cannot make my mind sit down.'

'Could you show me the way to the cathedral?' asked a stranger. 'Turn round that corner and inquire for the glove shop; the cathedral is close by,' was the odd reply of the intelligent native thus accosted.

The English naval officer who wrote to the Admiralty, 'My Lords—I have given the French a good drubbing,' had an odd but laconic way of composing his despatches. More curious was the regimental order issued by a Hibernian colonel, which ran thus: 'Colonel Haggerty desires it to be distinctly understood that no

passes for over twenty-four hours will be granted to the men unless written application is made for three days subsequent to the time the pass is wanted. Any man who applies for a pass and does not make use of it, must, before proceeding out of barracks on leave, or immediately he returns from leave, report that he wishes his pass cancelled to his pay-sergeant, else his indulgence will be stopped prior to the date of any such offence for a period of three weeks.

There was something quaint in the programme of the Flower Show of the Society which promotes window-gardening. The flower show, says the programme, 'will take place (D.V.) by permission of the Dean.' It was a thoughtful thing to translate, for the benefit of the working classes, the words indicated by D.V., *Diacono volante*, by permission of the Dean, a cheerful play upon capital letters.

An amusing announcement was issued by a corn-cutter from Liège, living at Spa: 'They extrect the corns vidout the slitest pain. Cutt nales deformed vitch spreeds in the fleisch—by a new methode vidout pain. They spokes French, Anglish, Italien, Spanitch, Portogeece, Dutch, and Garman, vid equal fluency, and rites dem.'—Over a bridge in Georgia is the following: 'Any person driving over this bridge in a pace faster than a walk, shall, if a white man, be fined five dollars, and, if a negro, receive twenty-five lashes, half the penalty to be bestowed on the informer.' In a small town near Avignon, the houses in the suburbs became flooded up to the level of the first floor. An enterprising resident distributed among his neighbours the following card: 'M. Brochet, Professor of Swimming, is prepared to give lessons at the pupil's residence.' The Professor may be said to have taken fortune at the flood.—A shop in Cheapside exhibits a card warning everybody against unscrupulous persons 'who infringe our title to deceive the public.' We are afraid the shopman does not quite say what he means, any more than the proprietor of an eating-house near the docks, on the door of which may be read the following announcement, conveying fearful intelligence to the gallant tars who frequent this port: 'Sailors' *vitals* cooked here.'

A boarding-house keeper announces in one of the newspapers that he has a cottage to let containing eight rooms and an acre of land.—A dealer in cheap shoes was equally ambiguous when he counselled in one of his advertisements: 'Ladies wishing these cheap shoes will do well to call soon, as they will not last long.' The same may be said of the following: 'This hotel will be kept by the widow of the former landlord who died last summer on a new and improved plan.'—A circular advocating a summer resort, calls attention to numerous cosy seats in forked trees and elsewhere—some of them just large enough for two persons. A manufacturing wire-worker invites the public to come and see his invisible wire fences.

An odd way of putting things is to describe a turkey as a red-nosed chicken with a large bustle—the definition of some smart wag. Affectation is defined as petty larceny in the abstract; and a lawyer of large experience says the art of civilisation is getting your neighbour's money out of his pocket and into your own without making

yourself amenable to the law; while an editor defines a certain kind of philanthropist as a zealous person bent on doing the greatest possible good to the greatest possible number with the greatest possible amount of other people's money.

Human efforts to achieve certain aims have been likened to a dog trying to catch its tail. Just as we think we are about to succeed, away goes the tail.

'What a recreation it is to be dying in love,' exclaimed a love-sick Hibernian. 'It sets the heart aching so delicately that there's no taking a wink of sleep for the pleasure of the pain.' A Scottish blacksmith being asked the meaning of metaphysics, replied: 'When the party wha listens disna ken what the party wha speaks disna ken what he means himself'—that's metaphysics.'

Perhaps as odd a way of putting things as any of the foregoing examples was furnished by a little Parisian mendicant, who, following a gentleman, said: 'Monsieur, give me just a penny. I'm an orphan by birth.' The definition was worth ten centimes to her.

THE METALS SODIUM AND POTASSIUM.

A NEW PROCESS OF MANUFACTURE.

THE announcement of Mr Castner's new process for the manufacture of these metals has taken the chemical and commercial worlds completely by surprise. The advantages claimed for that process were at first doubted, and many and strong were the expressions predicting its failure. Now, however, that it has become better known, it is admitted that applied chemistry has achieved another and most signal triumph. All that has been said in its favour has been fully realised, and we are now assured that the prices of sodium and potassium will in future be one shilling a pound each, instead of, as formerly, four shillings a pound for sodium, and sixty shillings for potassium. So great a diminution in the cost of production is not frequently made nowadays; and commerce and industry are sure to reap enormous advantages.

In the old process of preparing these metals from their carbonates there were great waste and great risks of explosion. These, especially in the case of potassium, made the process an expensive one. The cost for retorts alone, which were necessarily of wrought-iron, amounted to no less than fifty per cent. of the whole.

There is no risk of explosion in the new process, so long as the materials are used in the proper proportions; the temperature required for the distillation is only eight hundred degrees centigrade, or six hundred degrees less than in the old process; attention to so many minute details is not necessary; there is hardly any waste; and as the temperature is so much lower, the retorts last a much longer time. In this process the metals are prepared from their hydrates. There is nothing exactly novel in this, for Gay-Lussac and Thénard so long ago as 1808 prepared potassium

by running a slow stream of the fused hydrate over iron turnings heated to whiteness. Their method was not successful on the large scale. Castner's differs but slightly from it; but that slight difference is the wide interval which separates success and failure. Castner found that a combination of iron and carbon acting together reduced the hydrates to the metallic state with comparative ease.

He prepares his reducing agent in the following way: The mineral known as 'purple ore,' which is an oxide of iron, is heated to a temperature of five hundred degrees centigrade, and at the same time a mixture of two gases—carbonic oxide and hydrogen—is passed over it. The result is that the oxide of iron is changed into metallic iron, which remains in the state of a fine powder. This powder is then intimately mixed with melted pitch, and the mixture allowed to cool. It is next broken into lumps about the size of bricks, and these bricks are heated in large crucibles and converted into coke. This coke is found to contain a definite quantity of iron and carbon, which cannot be separated again by mechanical means. The coke is next powdered finely, and added in proper proportions to the hydrates of potash or soda, the mixture placed in a retort of cast-steel or cast-iron, and gently heated for about thirty minutes. This causes the mixture to fuse and give off large quantities of hydrogen gas. When the bulk of this gas has disappeared, the reaction proceeds with less violence; and the retort is then placed in a hotter furnace, where the temperature soon rises to about eight hundred degrees centigrade. The sodium and potassium distil over very quickly, and in about ninety minutes the operation is complete. Great care is taken that no carbonic oxide gas shall be produced during the distillation of potassium, as this gas is the cause of the formation of the explosive compound. Analysis of the gas evolved shows that this is practically possible without adopting any other precaution than that of using a quantity of the coke slightly less than the theoretical amount. The cost of retorts is estimated at twopence a pound on the yield of metal, as compared with two shillings a pound in the old process. This is an enormous saving.

The general public know very little about sodium and potassium. They have seen but little of them in the past, and may not see much more of them in the future, even at the reduced prices. The fact is that these metals do not possess the properties which fit them for general use. They cannot be exposed to air, nor can they be handled. Nevertheless, they are of very great value to the chemist by reason of these very drawbacks. That they will be largely used in the preparation of aluminium, magnesium, and silicon, is certain. In aluminium, we have a metal of considerable commercial value, extremely abundant, but extremely difficult of preparation. It is white like silver; it does not oxidise or tarnish in the air; it takes a die well, and is therefore useful for medals or coins; and with other metals it forms alloys of great practical importance. Owing to its high price—about fifty or sixty shillings a pound—it has not been much used in the past; but with sodium at one shilling a pound, the estimated

price of aluminium is twenty shillings a pound. On the whole, aluminium promises to be a valuable metal; but its uses will not be fully known until it can be manufactured at less cost than at present.

The demand for aluminium will be so great that the profits from the manufacture of this metal alone will yield Mr Castner a handsome return; and while it is difficult to foresee the many industries that may be affected by his invention, it may safely be said that a more valuable addition to manufacturing chemistry has not for a long time been made.

THE MYSTIC MUSIC OF THE SHELL.

BRIGHT crimson bars flecked all the west
With deeper glow than molten ore;
The soothing, sober hour of rest
Crept o'er the haven on the shore.
O'er cliff and vale athwart the land
Floated the sound of evening bells,
While all along the shining strand
Glad children gathered shells.

A simple, laughing child of three
Long held one to its eager ear.
What glowing, wondrous mystery
Did it in soothing murmurs hear?
Was there recalled the dream of heaven
Which its pure spirit knew of yore,
But which at its birth-hour was riven,
Here to be seen no more?

A sailor's rosy boy of nine
Placed to his ear the self-same shell.
What made his face so gladly shine?
What tale of wonder did it tell?
He saw fair isles in emerald seas,
And felt the fragrance of the air,
And bright song-birds on stately trees—
He sighed and wished him there.

Along the margin of the sea
A youth with shining face there came,
His soul steeped in love's mystery,
And breathing oft a dear one's name.
The shell sang to his yearning ear
That song which all the spirit fills;
And on his soul her voice fell clear
From o'er the sundering hills.

An aged man with silvery hair
Came slowly o'er the gleaming strand;
With faint smile on his face of care
He took a smooth shell in his hand.
No song for him of emerald seas
It sang, but breathed of woe and pain:
He heard sad voices in each breeze,
And sighed for youth again!

ALEXANDER LAMONT.

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